

Remarks

Applicant has amended claims 1, 10, 17, 19, 28 and 35 and has added new claims 37-40. Applicant respectfully submits that no new matter was added by the amendment, as all of the amended matter was either previously illustrated or described in the drawings, written specification and/or claims of the present application. Entry of the amendment and favorable consideration thereof is earnestly requested.

The Examiner has rejected claims 1, 10, 17, 19, 28 and 35 under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner has further rejected claims 1-16 and 19-34 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,995,534 to Fullerton ("the '534 patent"). The Examiner has still further rejected claims 17, 18, 35 and 36 under 35 U.S.C. §103(a) as being unpatentable over the '534 patent in view of U.S. Patent No. 6,240,126 to Ohashi ("the '126 patent"). These rejections are respectfully traversed.

Applicant has attached replacement FIG. 1 showing description of the blocks as submitted by the examiner. Applicant has also amended FIG. 1 to further illustrate the inventive arrangement as disclosed in the specification and claimed in all of the independent claims and also amended the paragraph describing FIG. 1. (p. 3, lines 12-23; p. 11, lines 20-25; p. 13, lines 1-22).

Applicant has amended claims 1, 10, 17, 19, 28 and 35 to address the examiners 112 rejections.

The present invention is directed toward a system for transmitting a data signal between a first moveable part and a second stationary part and is particularly applicable to contact-free revolving transmission circuits such as are used with computer tomographs. To accomplish this, the system utilizes a transmitter to transmit the data signal

through a transmission circuit to a receiver. The transmission circuit may comprise for instance, a line-bound transmission circuit, a contacting transmission circuit, or a contact-free transmission circuit. The transmitter generates a carrier signal to combine with the data signal to thereby generate a transmitter output signal. Either the transmitter or the receiver may be located in the movable part or the stationary part. The system further includes a modulator for modulating at least a portion of the transmitter output signal. It is conceived that the modulator may modulate, the data signal, the carrier signal or the transmitter output signal, which comprises both. The modulator is coupled to the transmission circuit such that modulation the at least a portion of the transmitter output signal may be applied to various points in the transmission circuit. In this manner, the signal spectrum of the transmitter output signal will be substantially evenly distributed so that a mean spectral power density of the transmitter output signal is reduced. The modulator may accomplish this by means of for instance, phase or frequency modulation.

All of the claims of the present application require the transmitter to be moveable relative to the receiver, and a modulator unit that modulates at least a portion of the transmitter output signal at substantially any site in and along the transmission circuit so that a mean spectral power density of the transmitter output signal is reduced.

The '534 patent is directed to a radio communication system that is an ultrawide-band time domain system using one or more subcarriers to communicate information from a radio transmitter to a radio receiver. (abstract). The use of modulated subcarriers provides added channelization to smooth fidelity and time positioning of a periodic or coded timing signal. (abstract). The '534 patent further provides for direct digital modulation. (abstract). The '534 patent however fails to teach, disclose or suggest a transmitter being moveable relative to a receiver or a modulator unit that modulates at

least a portion of the transmitter output signal at substantially any location in and along the transmission circuit as required by all the claims of the present invention.

The '534 patent teaches that the process by which the signal propagates is by means of a transmitter 901 that sends the signal to a transmit antenna and is received by a receive antenna, which sends the signal to a receiver 903. (FIGS. 9 & 10; col. 13, lines 9-16). Nowhere however, does the '534 patent teach, disclose or suggest that the transmitter is in any way movable relative to the receiver. In fact, the '534 patent actually teaches away from a movable transmitter where it teaches that "the present invention is also suitable for transmission through coaxial cable" such that "the transmit and receive antennas are eliminated." (col. 13, lines 16-18). In contrast, the transmission circuit required by all of the claims of the present invention is provided such that the data signal may propagate from the transmitter to the receiver while one is moving with respect to the other. If the transmission circuit was a coaxial cable, the transmitter and receiver would not be movable with respect to each other.

Therefore, the '534 patent cannot anticipate or render obvious any claim of the present invention because it does not teach, disclose or suggest the transmitter to be moveable relative to the receiver as required by all of the claims of the present application.

The '534 patent also fails to teach a modulator unit that modulates at least a portion of the transmitter output signal at substantially any site in and along the transmission circuit so that a mean spectral power density of the transmitter output signal is reduced as required by all of the claims of the present invention. Rather, the '534 patent teaches that information is added to a subcarrier that is then combined with the output of a code time modulator, which is sent to an antenna. (FIG. 10; col. 13, lines 55-61; col. 14, lines 14-17). Nowhere however, does the '534 patent teach or disclose that the modulator can modulates the transmitter output signal at substantially any site

in and along the transmission circuit. The '534 patent fails to teach this because it is directed toward a communication system for transmitting a signal (RF) to a remotely located receiver with the propagation path being the air. Alternatively, the transmission circuit of the present invention may comprise a line-bound transmission circuit, a contacting transmission circuit, or a contact-free transmission circuit, and may further facilitate transmission along either rotational or a linear path. The construction of the transmission circuit then, allows for the modulator to modulate the transmitter output signal at substantially any site in and along the transmission circuit, which is something the '534 patent cannot do. A major benefit of modulating the transmitter output signal at substantially any site in and along the transmission circuit is that the signal spectrum of the transmitter output signal will be substantially evenly distributed, which in turn causes the mean spectral power density of the transmitter output signal to be reduced. This is a significant advantage that cannot be realized by the '534 patent because of necessary structural elements included in the communications system, namely that the transmitter does not have access to the transmitter output signal at substantially any site in and along the transmission circuit.

Therefore, Applicant respectfully submits that the '534 patent cannot anticipate or render obvious any claim of the present invention because it does not teach, disclose or suggest a modulator unit that modulates at least a portion of the transmitter output signal at substantially any site in and along the transmission circuit so that a mean spectral power density of the transmitter output signal is reduced as required by all of the claims of the present invention.

The '126 patent is directed to a wireless communication device for performing bi-directional communication with a remote communication device while repeatedly hopping a carrier wave frequency at a predetermined hopping pattern. (col. 1, lines 5-9). Nowhere however, does the '126 patent teach, disclose or suggest that the transmitter

is moveable relative to the receiver, and that a modulator unit modulates at least a portion of the transmitter output signal at substantially any site in and along the transmission circuit so that a mean spectral power density of the transmitter output signal is reduced as required by all the claims of the present application.

For instance, the '126 patent fails to teach or disclose that the transmitter is moveable relative to the receiver. (FIGS. 1, 2, 8a & 8b). In fact, the '126 patent teaches away from this feature teaching that "the base unit 1 is connected to an external circuit including a personal computer" and that two base units communicate to each other such that when one is transmitting the other is receiving and vice versa. (col. 5, lines 49-62, see also FIG. 8a). Therefore, these base units are not movable relative to each other as required by all the claims of the present application.


Applicant still further submits that the '126 patent fails to teach or disclose that a modulator unit modulates at least a portion of the transmitter output signal at substantially any site in and along the transmission circuit as required by all the claims of the present application. In fact, the '126 patent actually teaches away from this feature teaching the use of remote wireless communication devices. (col. 1, lines 5-9).

Therefore, Applicant respectfully submits that the '126 patent cannot anticipate or render obvious any claim of the present invention because it does not teach, disclose or suggest a transmitter moveable relative to a receiver or a modulator unit that modulates at least a portion of the transmitter output signal at substantially any site in and along the transmission circuit so that a mean spectral power density of the transmitter output signal is reduced as required by all of the claims of the present invention. Applicant still further submits that because neither the '534 patent nor the '126 patent teach either of these limitations, no combination of the two can render any claim of the present invention obvious.

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Response to Official Action

It is respectfully submitted that claims 1-36, all of the claims remaining in the application, are in order for allowance and early notice to that effect is respectfully requested.

Respectfully submitted,



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